(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property **Organization**

International Bureau





(43) International Publication Date 11 March 2004 (11.03.2004)

PCT

(10) International Publication Number WO 2004/020345 A1

(51) International Patent Classification7: 1/58, C05F 9/04

C02F 1/52,

(21) International Application Number:

PCT/AU2003/001090

(22) International Filing Date: 27 August 2003 (27.08.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2002951011 AU 27 August 2002 (27.08.2002) 2002951437 16 September 2002 (16.09.2002) AU

(71) Applicant (for all designated States except US): NAU-TECHNOLOGY INVESTMENTS [VU/VU]; Moores Rowland Vanuatu, Windsor House, Port Vila (VU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): DREW, Daniel, Maxwell [AU/AU]; 34 Norfolk Court, Coburg, VIC 3058 (AU). DUCKSBURY, Alfred, Norman [AU/AU]; 17 Elliott Street, Cheltenham, VIC 3192 (AU). JOSEY, Darryl, K. [AU/AU]; 15-17 Boardman Street, Kallangur, QLD 4503 (AU).

- (74) Agent: SPRUSON & FERGUSON; G.P.O. Box 3898, Sydney, NSW 2001 (AU).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESSES FOR TREATMENT OF WASTEWATER, SEPARATION, DEODORISATION AND RE-USE OF **BIOSOLIDS**

(57) Abstract: The present invention relates to a process for treating wastewater containing suspended solids comprising adding to the wastewater a treating substance in an amount sufficient to enhance at least one of (a) the settling rate of the solids, (b) the bulk density of the solids and (c) the filterability of the solids, said treating substance being selected from the group consisting of (i) bauxite refinery residue known as red mud, and (ii) red mud that has been at least partially reacted with calcium and/or magnesium ions so as to have a reaction pH, when mixed with five times its weight of water, of less than 10.5. In addition, the invention relates to processes for reducing the concentration of dissolved phosphorus-containing species in wastewater, for decreasing the odour of a material having an odour due to the presence of one or more sulphur-containing substances and for decreasing the propensity to develop odours and a composting process.

